request that this provisional rejection be held in abeyance until an indication of allowable subject matter is made in this or the '165 application.

III. Rejections under 35 U.S.C. § 103(a)

Cotteret in view of Tsujino

The Office has maintained its rejection of claims 32 to 64, 67, and 69 to 74 as obvious over the teachings of *Cotteret* (U.S. Pat. No. 5,514,188) in view of those of *Tsujino* (U.S. Pat. No. 4,961,925) *See Office Action*, p. 2, l. 18-p. 3, l. 19. The Office has admitted that *Cotteret* is deficient for failing to teach or suggest a composition comprising "at least one enzyme" and "at least one donor" and for failing to teach or suggest "at least one peroxidase." *See Office Action* of 05/09/00, p. 7, ll. 1-2. Nevertheless, the Office takes the position that it would have been obvious to one of ordinary skill in art to substitute the hydrogen peroxide oxidants of *Cotteret* with an enzyme/donor system as in *Tsujino*, because *Tsujino* teaches that enzyme/donor systems give superior results in effects ancillary to dyeing, e.g., decreased skin irritation and damage to hair and skin. *See Office Action* of 05/09/00, p. 8, ll. 1-9. Applicants respectfully traverse this rejection.

The Office has been applying an improper "obvious to try" rationale in support of its prima facie case of obviousness. *See M.P.E.P.* § 2145 X, B; *see, e.g., In re Dien*, 371 F.2d 886 (CCPA 1967) (enclosed for the Office's consideration). For example, in one obvious to try case, which is analogous to this case, an applicant claimed an improved ring-closure reaction using a compound PPA as a ring-closing agent. *See Dien*, 371 F.2d at 886. The Examiner rejected the claims as obvious over the teachings

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of one reference in view of a second reference. *See Dien*, 371 F.2d at 886. The primary reference taught the basic ring-closure reaction and stated the yields were "less than satisfactory" when one used the ring-closing agent phosphorous pentoxide. *See Dien*, 371 F.2d at 887. A secondary reference taught "the use of [the recited] PPA as a 'new cyclization agent in preparative organic chemistry' and reports 'surprisingly high cyclic compound yields.'" *See Dien*, 371 F.2d at 887. The secondary reference even stated PPA surpassed phosphorous pentoxide (i.e., the ring-closing agent of the primary reference) "in many respects." *See Dien*, 371 F.2d at 887.

In the rejection, the Examiner urged that "a chemist of ordinary skill would be led by the [teachings of the secondary] reference to try polyphosphoric acid in the cyclization [reaction of the primary reference], since the cyclization reagents used by [the primary reference], though operative, leave much to be desired, and since [the secondary reference] states that P.P.A. has been found to offer many advantages over other previously used reagents." *See Dien*, 371 F.2d at 887. The Board agreed with the Examiner, reasoning "the fact that [the primary reference's] cyclizing reagents were not entirely satisfactory would be an incentive to one skilled in the art to use other cyclizing reagents in [the primary reference's] process as they become available." *See Dien*, 371 F.2d at 888.

However, the predecessor court to the Federal Circuit reversed the Board. *See Dien*, 371 F.2d at 888. The Court noted the Board's conclusion was built on the unsatisfactory nature of the primary reference's reaction and the enthusiastic tenor of secondary reference's disclosure. *See Dien*, 371 F.2d at 888. "But the mere existence of an unsatisfactory process and the attendant incentive to seek improvement do not

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negative patentability." *Dien*, 371 F.2d at 888. Prima facie obviousness cannot be inferred from the alleged inadequacies of the prior art. *See Dien*, 371 F.2d at 888. The issue, according to the court, was whether the elimination of the alleged inadequacies by way of the claimed invention would have been obvious to one of ordinary skill in the art. *See Dien*, 371 F.2d at 888. More specifically, the issue was whether the prior art made it obvious to substitute PPA for phosphorous pentoxide to change a generally unsatisfactory process into an excellent one. *See Dien*, 371 F.2d at 888 ("whether the Uhlig disclosure would have made it obvious that the substitution of PPA for phosphorous pentoxide would change a generally unsatisfactory process into an excellent one.").

The court said no and reasoned there were countervailing considerations weighing against an expectation of success that must be considered. *See Dien*, 371 F.2d at 888. Specifically, the "surprisingly high" yields reported in the second reference were suspect. *See Dien*, 371 F.2d at 888 ("Furthermore, the 'surprisingly high' yields reported in the body of the article seem to be increases on the order of 15-25%--considerably less than appellant's increase of more than 100%."). There were "extra difficulties" associated with ring closure decreasing the expectation of success. *See Dien*, 371 F.2d at 888. ("He certainly would be cognizant of the extra difficulty associated with closure of the second ring in double-ring closure reactions and would not assume that the Uhlig catalogue of successful single-ring closures presaged success in double-ring closure."). There were comparative data indicating the opposite of an expectation of success of achieving higher yields. *See Dien*, 371 F.2d at 888 ("Nor from them would he derive an expectation of such increased yields since the

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yields reported in the preparation of five-ring compounds average less than those of the old Liebermann process.").

Additionally, the generality of the disclosure of the secondary reference indicated "the inappropriateness of literalism in its reading." *See Dien*, 371 F.2d at 888 ("The generality of Uhlig's disclosure indicates the inappropriateness of literalism in its reading-- the quotations relied on are but parts of the first two sentences of an article which later discusses the merits of PPA in detail, never referring to processes analogous to appellant's invention."). The quotations used by the Office were a small part of the secondary reference which later discusses the merits of PPA in detail but never refers to a process analogous to the claimed invention. *See Dien*, 371 F.2d at 888.

In this rejection, just as the Board's conclusion was built on the unsatisfactory nature of the primary reference's reaction and the enthusiastic tenor of secondary reference's disclosure in *Dien*, the Office urges that *Tsujino* and *Cotteret* teach an unsatisfactory hair dyeing process and relies upon the enthusiastic nature of the disclosure of *Tsujino*. As was the case in *Dien*, the mere existence of an alleged unsatisfactory process and the alleged attendant incentive to seek improvement do not negative patentability, i.e., make a prima facie case of obviousness. Analogous to the issue in *Dien*, the issue in this rejection is whether the prior art made it prima facie obvious to make the proposed substitution to change an urged generally unsatisfactory process into an excellent one. Just as there were in *Dien*, there are at least 4 countervailing considerations decreasing the expectation of success of improvements as a result of the Office's proposed substitution.

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First, just as the "surprisingly high" yields reported in *Dien* were suspect, the data in Table 1 of *Tsujino* are unreliable. The amount of hydrogen peroxide used in the examples of *Tsujino* are inconsistent with statements about the general use of hydrogen peroxide as oxidants for oxidation dyes. Specifically, the disclosure of *Tsujino* reads as follows: "In general, with the oxidation hair dyes, for oxidation polymerization of the oxidation dye and in order to bleach hair, hydrogen peroxide is used at a concentration of 1.5% by weight to **4.0**% by weight." *Tsujino*, col. 3, ll. 15-17 (emphasis added). On the other hand, the comparative Examples shown in Table 1 use **5.1**% hydrogen peroxide, which is determined by multiplying the 35% concentration of hydrogen peroxide in the utilized solution by the 14.7% total concentration of the final composition. *See Tsujino*, Exs. 1-12 and 1-13.

In other words, the comparative examples use an amount 28.6% higher than the highest amount generally used in oxidation dyeing (4%) according to the disclosure of *Tsujino*. Because the amount of hydrogen peroxide used in the comparative examples far exceeds that generally used according to the disclosure of *Tsujino*, these comparative data in *Tsujino* are an unfair comparison to general oxidation dyes and therefore suspect. Thus, these data in Table 1 of *Tsujino* cannot predict any results that may occur when employing a generally used oxidation dyeing composition and cannot form a basis for an expectation of success.

Second, just as there were "extra difficulties" decreasing the expectation of success in *Dien*, there are extra difficulties decreasing the expectation of success here in this rejection. These data in Table 1 of *Tsujino* relate to a homopolymer of a single oxidation base, para-phenylenediamine, and not a copolymer comprising oxidation

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bases and a coupler. Oxidation bases and couplers react by (co)oxidation and (co)polymerization. *See*, e.g., *The Science of Hair Care*, Ed. Charles Zviak, Marcel Dekker, Inc. New York (1986) 235-286, at 268 (hereinafter "*SHC*") (enclosed for the Office's consideration). *SHC* shows the reaction mechanism of PPD and states that during the reaction of PPD the reactant's color changes from a colorless compound to a highly-blue 3-ringed intermediate to black polymer pigment as the reaction progresses to completion. *See* Zviak, *supra.*, p. 269. These data in Table 1 of *Tsujino* show a single oxidation base, just like the cited example in Zviak. Thus, these data in Table 1 of *Tsujino* cannot predict any results that may occur when employing oxidation dyeing compositions comprising multiple oxidation bases and couplers and cannot form a basis for an expectation of success.

Third, just as comparative data indicate the opposite of an expectation of success in *Dien*, explicit statements in *Tsujino* indicate a diminished expectation of success in applying the teachings of *Tsujino*. A relevant part of *Tsujino* reads as follows: "According to the present invention, a good finish of hair can be obtained while retaining **almost** the same dyeing effect as that by using hydrogen peroxide as the oxidizing agent." *See Tsujino*, col. 5, ll. 43-46. (emphasis added). The word "almost" means "not quite." *See American Heritage College Dictionary*, p. 38 (enclosed for the Office's consideration). So, the compositions would have provided lesser and not equal dyeing potential vis-à-vis corresponding compositions using conventional oxidants. Indeed, the plain meaning of this statement indicates no expectation of an improvement in the dyeing properties upon making the proposed substitution.

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The Office has cited the symbols shown in Table 1 of *Tsujino* as standing for an improvement. *See Office Action,* p. 3, ll. 7-9. These symbols, however, are discrete, i.e., the dyeing properties are on an integer scale from 1 to 4 (x, triangle, circle, and concentric circle), and incapable of distinguishing the best and worst members of a given scale. For example, similarly to a 4-star hotel rating system, many hotels may be 4-star hotels, but you cannot identify the best or worst 4-star hotels from the discrete 4-star rating alone. Likewise, one cannot distinguish those members having the same, e.g., concentric circle, rating in *Tsujino*. *See Tsujino*, col. 4, ll. 51-56.

On the other hand, the explicit statement of *Tsujino* quoted above does distinguish the properties of members having the same rating (e.g., a concentric circle). The disclosure states "retaining almost the same dyeing effect," and the word "almost" means "not quite." As such, there can be no expectation of success to make the proposed substitution to improve the dyeing effect.

Fourth, just as the generality of the disclosure of the secondary reference indicated "the inappropriateness of literalism in its reading" in *Dien*, the general disclosure of *Tsujino* indicates "the inappropriateness of literalism in its reading" here in this rejection. The Office has urged the use of mutarotose and/or peroxidase in examples 1-3, 1-5, and 1-10 show an improvement of the dyeing properties of the corresponding compositions lacking mutarotose and/or peroxidase. *See Office Action,* p. 3, ll. 9-13. This improvement, however, is not with respect to the comparative examples utilizing hydrogen peroxide (1-12 or 1-13), but with respect to the other compositions of *Tsujino*.

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A proper comparison would be with the comparative examples using hydrogen peroxide. But, according to the disclosure of *Tsujino*, the compositions containing mutarotose and/or peroxidase of *Tsujino* are expected to retain "almost the same dyeing effect," i.e., not quite the same dyeing effect. As such, there can be no expectation of success to make the proposed substitution to improve the dyeing effect.

What the Office proposes, namely, adding mutarotose and/or peroxidase to various compositions comprising the enzyme/donors of *Tsujino* to look for an alleged improvement, is at best an obvious-to-try argument. However, "obvious to try" is not the standard for establishing a prima facie case of obviousness. *M.P.E.P.* § 2145 X, B. In other words, the Office urges it would have been obvious to explore a general approach that seemed to be a promising field of experimentation. *See, e.g., In re O'Farrell*, 853 F.2d 894, 903, 7 USPQ2d 1673, 1681 (Fed. Cir. 1988). Thus, the general disclosure of *Tsujino* with respect to all oxidation dyes, even when combined with the general disclosure of *Cotteret* with respect to all oxidants, cannot form a basis for an expectation of success for the particular claimed invention.

In view of the above countervailing considerations, Applicants respectfully submit that there is no basis for an expectation of success for the proposed substitution to change an urged generally unsatisfactory process into an improved one, let alone an excellent one as was the standard in *Dien*. Thus, there can be no reasonable expectation of success and this rejection should be withdrawn.

Yamahatsu

The Office has rejected claims 75 and 76 as obvious over the teachings of *Yamahatsu* (EP 716,846). *See Office Action*, p. 3, l. 20-p. 4, l. 7. The Office has

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admitted that *Yamahatsu* "differs from the instant claims in not showing a working example of a composition containing all three dyes used together." *See Office Action*, p. 4, ll. 2-3. Nevertheless, the Office has urged that "[i]t would have been obvious . . . to formulate a composition containing the three claimed dyeing components as well as uricase and uric acid . . . ." *See Office Action*, p. 4, ll. 3-5. Applicants respectfully traverse this rejection.

To prevent using hindsight based on an invention thereby defeating the patentability of the invention, the Office must show a motivation to modify a reference creating the alleged prima facie case of obviousness. *See M.P.E.P.* § 2143.01. Along these lines, the motivation must be particular to the claimed invention. *See M.P.E.P.* § 2141.01.

Nevertheless, the Office has urged that "[*Yamahatsu* teaches] all of the listed oxidation dyes as being useful in the dyeing system of his invention, and a hair dye chemist knows that mixtures of oxidation dyes are conventionally used to obtain different nuances of color." *See Office Action*, p. 4, ll. 3-7. The Office's motivation, however, is not particular to the claimed invention. Just because components are known in the art does not mean randomly adding them for whatever reason would produce a composition for dyeing keratinous fiber according to the present invention. In other words, just because ingredients can be combined does not mean the Office has set forth a motivation to add every combination of known ingredients in an attempt to form a composition as claimed. *See M.P.E.P.* § 2143.01 ("The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.").

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Reaching the claimed invention would require impermissible hindsight, because only the present specification, but not any reference of record, suggests the claimed invention.

Indeed, a generic disclosure does not necessarily render prima facie obvious everything within the ambit of the general disclosure. *See In re Baird*, 16 F.3d 380, 29 U.S.P.Q.2d 1550 (Fed. Cir. 1994) (enclosed for the Office's consideration). For example, in *Baird*, the Board affirmed an obviousness rejection over a prior art reference which undisputedly disclosed compositions comprising a generic diphenol formula that encompassed a claimed ingredient (bisphenol A) and the remaining claimed ingredients, because a generic disclosure of the reference provided ample motivation to select the claimed bisphenol A to reach the claimed composition. *See id.* at 382, 29 U.S.P.Q.2d at 1551.

The Federal Circuit reversed the Board's decision, and held that a generic formula does not by itself necessarily render a compound encompassed by that formula obvious. *See id.* at 382, 29 U.S.P.Q.2d at 1552. More importantly, for purposes of the present rejection, because the generic formula of the diphenol encompassed numerous different diphenols, the court could not find a suggestion in the reference to select the particular combination of variables in that formula that would give rise to the claimed bisphenol A. Moreover, as the court observed, the cited reference seemed to teach away from using bisphenol A by focusing on different diphenols as "preferred." *See id.* at 382-83, 29 U.S.P.Q.2d at 1552. In explaining its decision, the Federal Circuit noted the large number of diphenols encompassed by the generic diphenol of the reference, coupled with the clear preference for diphenols other than that claimed by Baird, and

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concluded that the prior art did "not teach or fairly suggest the selection of bisphenol A." *See id.* at 383, 29 U.S.P.Q.2d at 1552.

In this rejection, as in *Baird*, the large number of the possible combinations of 3 oxidation dyes listed in *Yamahatsu*, combined with a clear preference for combinations of dyes other than those of the presently claimed invention, necessitates that *Yamahatsu*, like *Baird*, does "not teach or fairly suggest" the modifications necessary to reach a particular claimed invention.

The present invention, *e.g.*, of claim 75, includes a composition comprising (**Q**) "at least one first oxidation base chosen from [recited species]," (**R**) "at least one second oxidation base chosen from [recited species]," (**S**) " at least one meta-aminophenol coupler chosen from [recited species]," (**T**) " at least one 2-electron oxidoreductase chosen from [recited species]," and (**U**) " at least one donor for said 2-electron oxidoreductase chosen from [recited species]."

On the other hand, the prior art *in its entirety* must also be considered and compared with the presently claimed invention *as a whole*. *See M.P.E.P.* § 2141. *Yamahatsu* describes its invention as follows:

> According to the present invention, there is provided a one-pack type oxidation hair dye composition which comprises uricase, an oxidation dye, uric acid and optionally a reducing agent the electrode potential of which is more positive than that of ascorbic acid but more negative than that of uric acid, pH of said composition being 6.7 to 9.5.

Yamahatsu, p. 2, ll. 24-26. The term "oxidation dye" of *Yamahatsu* is completely generic and is not particular to the claimed invention. It does not necessarily embrace the ingredients (**Q**), (**R**), or (**S**), let alone a composition comprising (**Q**), (**R**), and (**S**) as proposed by the Office. Just as the generic formula of diphenols in *Baird* did not render

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the claimed bisphenol A obvious, a mere generic disclosure of an "oxidation dye" here does not necessarily render all compositions encompassed by that disclosure prima facie obvious.

Additionally, nothing in the teachings of *Yamahatsu* suggest the required motivation and/or reasonable expectation of success for choosing ingredients embracing (**Q**), (**R**), and (**S**) as part of *Yamahatsu's* composition. Specifically, the disclosure of *Yamahatsu* states its "oxidation dyes" are "not specifically limited": "The oxidation dye to be used in the present invention and its amount are not specifically limited." *See Yamahatsu*, p. 3, l. 3. In addition, the claims of *Yamahatsu's* recite the term "oxidation dye" as opposed to particular oxidation dyes. *See Yamahatsu*, p. 19. This statement and the claims, being totally generic to "oxidation dyes," cannot provide motivation for choosing individual ingredients embracing (**Q**), (**R**), or (**S**), let alone providing motivation for making a composition comprising (**Q**), (**R**), and (**S**) according to the present invention. Nevertheless, the generic statement and broad claims do show the potentially vast number of ingredients that may be used in *Yamahatsu's* composition, just like the numerous diphenols that could be used within the generic formula in *Baird*.

Just as the *Baird* court searched for a suggestion in the reference to select the particular combination of variables in the formula that would give rise to the claimed bisphenol A, nothing in the teachings of *Yamahatsu* suggests the particular combination of ingredients needed to have a chance of reaching the claimed invention. The disclosure of *Yamahatsu* lists at least 38 particular dyes summarized in the Table 1 below. *See Yamahatsu*, p. 3, ll. 6-15.

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Table 1: *Yamahatsu's* Listed Oxidation Dyes.[1]

1. 3,3'-iminodiphenol, 2. m-phenylenediamine hydrochloride, 3. o-aminophenol, 4. catechol, 5. 2,6-diaminopyridine, 6. 1,5-dihydroxynaphthalene, 7. diphenylamine, 8. toluene-3,4-diamine, 9. -naphthol, 10. hydroquinone [1,4-Benzenediol], 11. pyrogallol [1,2,3-Trihydroxybenzene], 12. phloroglucin [1,3,5-benzenetriol], 13. m-phenylenediamine, 14. o-aminophenol sulfate, 15. 4,4-diaminodiphenylamine sulfate, 16. 2,4-diaminophenol sulfate, 17. m-phenylenediamine sulfate, 18. 2,4-diaminophenoxyethanol hydrochloride, 19. **toluene-2,5-diamine| hydrochloride**, 20. p-phenylenediamine hydrochloride, 21. **N-phenyl-p-phenylenediamine hydrochloride**, 22. **N-phenyl-p-phenylenediamine acetate**, 23. **toluene-2,5-diamine**, 24. p-phenylenediamine, 25. **N-phenyl-p-phenylenediamine**, 26. o-chloro-p-phenylenediamine sulfate, 27. **toluene-2,5-diamine sulfate**, and 28. p-phenylenediamine sulfate.	29. 2,4-diaminophenol hydrochloride, 30. p-methylaminophenol sulfate, 31. p-methylaminophenol, 32. **p-aminophenol sulfate**, and 33. **p-aminophenol**.	34. **m-aminophenol**, 35. ***m-aminophenol sulfate***, 36. **5-(2-hydroxyethylamino) -2-methylphenol**, 37. **5-amino-o-cresol**, and 38. **5-amino-o-cresol sulfate**.

From this list, the Office has identified compounds (25), (33), and (34) for its proposed composition. *See Office Action*, p. 4, l. 1. It is respectfully submitted that the proposed composition is the result of using hindsight and not a particular suggestion in the disclosure of *Yamahatsu*. There are **8436** possible ways to combine 3 of these 38 dyes to form a composition (see Appendix). In other words, there is a **1** in **8436** chance, looking at only the dyes explicitly named in the list of *Yamahatsu*, that the Office would

[1] The placement of ingredients into columns merely facilitates discussion. *Yamahatsu* does not categorize the dyes as such. Nor does *Yamahatsu* state these dyes are equivalent for any *specific* purpose but merely states that these dyes are exemplary, nonlimited oxidation dyes.

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randomly choose this particular composition. Such a small probability tends to show the use of impermissible hindsight rather than the identification of a suggestion to make the particular proposed composition.

In all fairness, the Office could have identified, for its proposed composition, other sets of 3 compounds, i.e., 1 from (**Q**), 1 from (**R**), and (**S**) to have a chance of reaching the presently claimed invention. *Yamahatsu* lists 6 dyes within the scope of (**Q**), 2 dyes with the scope of (**R**), and 5 within the scope of (**S**). *See* the bolded dyes in Table 1 to facilitate counting. Thus, the list produces only **60** (=6x2x5) such possible compositions.

In other words, these calculations predict that only **0.71%** (=60/8436 x 100%) of the possible combinations of 3 compounds available from the list of *Yamahatsu* can correspond to a composition comprising (**Q**), (**R**), and (**S**). Given this low probability, however, using the list of *Yamahatsu* as a suggestion to modify a composition of *Yamahatsu* tends to show the use of impermissible hindsight or random chance rather than the identification of a motivation to make a particular claimed invention. The required motivation and expectation of success must be found in the prior art and require more than random chance. *See M.P.E.P.* § 2143.01; 2145 X, A.

Additionally, nothing else in the teachings of *Yamahatsu* suggests the particular combination of ingredients needed to have a chance of reaching the claimed invention. Specifically, *Yamahatsu* lists several dyes as "particularly preferred" oxidation dyes:

> Among them, particularly preferred oxidation dyes used in the composition of the present invention are p-phenylenediamine and salts thereof, p-aminophenol, 5-amino-o-cresol, p-methyl-p-aminophenol sulfate, m-aminophenol, p-nitro-o-phenylenediamine, 2,6-diaminopyridine, resorcinol, o-aminophenol, and m-phenylenediamine hydrochloride.

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Yamahatsu, p. 3, ll. 21-23. This passage does not list dyes embraced by the particular present claim limitation (**Q**), identified above. This passage, being silent with respect to (**Q**), cannot provide motivation for choosing a particular individual ingredient embraced by (**Q**), let alone providing motivation for making a composition comprising three particular ingredients embraced by each of (**Q**), (**R**), and (**S**) as proposed by the Office.

Furthermore, as the prior art in *Baird* "preferred" other diphenols over the claimed bisphenol A there, *Yamahatsu* "particularly prefers" oxidation dyes other than those embraced by (**Q**) here. Thus, as in *Baird*, this passage by itself or in combination with any other of the above passages cannot suggest the desirability for choosing a composition comprising the particular ingredients embraced by each of (**Q**), (**R**), and (**S**) as proposed by the Office.

Moreover, *Yamahatsu* exemplifies only dyes from this "particularly preferred" list, as summarized in the tables below:

Table 2: *Yamahatsu's* Experiments.

ingredient	Exp. 1	Exp. 2	Exp. 3	Exp. 4	Exp. 5
24. p-phenylenediamine	√	√	√	√	√
33. p-aminophenol	√		√	√	√
34. m-aminophenol	√	√		√	√
39. m-phenylenediamine hydrochloride	√			√	√
13. m-phenylenediamine		√	√		
3. o-aminophenol					

The numbers in the first column of Table 2 correspond to the numbers of the dyes enumerated in Table 1. 39 is m-phenylenediamine hydrochloride, which is not found in Table 1. The top row is short hand for Experiment 1, 2, *etc.* √ means the ingredient is present.

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Table 3: *Yamahatsu's* Examples

ingredient	Ex. 1	Ex. 2	Ex. 3	Ex. 4	Ex. 5	Ex. 6	Ex. 7	Ex. 8	Ex. 9
24. p-phenylenediamine	√	√	√	√	√	√	√	√	√
33. p-aminophenol	√			√	√		√		√
34. m-aminophenol	√		√		√		√		√
39. m-phenylenediamine hydrochloride		√	√			√	√	√	√
13. m-phenylenediamine									
3. o-aminophenol				√					

The top row is short hand for Example 1, 2, *etc.*

These examples do not list a particular dye embraced by (**Q**). These examples, being silent with respect to a particular ingredient embraced by (**Q**), cannot provide motivation for choosing a particular individual ingredient embraced by (**Q**), let alone providing motivation for making a composition comprising the particular ingredients embraced by each of (**Q**), (**R**), and (**S**) as proposed by the Office. Thus, as in *Baird*, these examples by themselves or in combination with any other of the above passages cannot suggest the desirability for choosing a composition comprising the particular ingredients embraced by each of (**Q**), (**R**), and (**S**) as proposed by the Office.

Moreover, as the prior art in *Baird* taught diphenols different from the claimed bisphenol A, *Yamahatsu* teaches to use sets of oxidation dyes comprising ingredients different from the particular ingredients embraced by each of (**Q**), (**R**), and (**S**). The examples of *Yamahatsu* do not list a particular dye embraced by (**Q**). Thus, by analogy to the reasoning in *Baird*, these data by themselves or in combination with any other of the above passages cannot suggest the desirability for making a composition comprising each of the particular ingredients (**Q**), (**R**), and (**S**) as proposed by the Office.

Similarly to *Baird*, *Yamahatsu's* generic "oxidation dye" and list of 38 oxidation dyes does not by itself render a composition encompassed by that generic disclosure

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obvious. Furthermore, *Yamahatsu's* generic "oxidation dye" encompasses numerous different possible compositions of three ingredients, even using a truncated list of 38 ingredients, and *Yamahatsu* lacks a suggestion to select the particular combination of ingredients embraced by the term "oxidation dye" that would give rise to the presently claimed invention. Moreover, similar to what the *Baird* court observed, *Yamahatsu* seems to teach away from using a particular ingredient embraced by (**Q**) in a composition comprising the particular ingredients (**R**) and (**S**) by focusing on different dyes as "particularly preferred" and exemplifying other dyes instead. Thus, just as the court concluded in *Baird*, *Yamahatsu* does not teach or fairly suggest the selection of the particular ingredients needed to make a composition as proposed by the Office. Thus, this rejection is improper and should be withdrawn.

IV. Rejection under 35 U.S.C. § 112, Second Paragraph

The Office has rejected claims 33 and 34 as being redundant. *See Office Action*, p. 4, ll. 8-12. Applicants respectfully traverse this rejection.

Claims 33 recites "human keratin fibers" and claim 34 recites the "human keratin fibers are hair." Keratin is found in hair and nails. *See Stedman's Medical Dictionary* p. 913 (26th Ed. Williams & Wilkins) (1995) ("A scleroprotein or albuminoid present largely in cuticular structures (*e.g.*, hair, nails, horns) . . . .") (enclosed for the Office's consideration). Thus, claims 33 and 34 vary in scope and are not redundant. This rejection should be withdrawn.

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CONCLUSION

In view of the foregoing remarks, Applicants respectfully request reconsideration and reexamination of the pending claims and the timely allowance of the pending claims.

The Office is invited to contact Sean A. Passino at (202)408-6065 if any matters can be resolved by a telephone conference.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.

Dated: January 9, 2002

By: _____
Sean A. Passino
Reg. No. 45,943

Enclosures:

(1) *In re Dien*, 371 F.2d 886 (CCPA 1967);
(2) *American Heritage College Dictionary*, p. 38;
(3) *In re Baird*, 16 F.3d 380, 29 U.S.P.Q.2d 1550 (Fed. Cir. 1994);
(4) *The Science of Hair Care*, Ed. Charles Zviak, Marcel Dekker, Inc. New York (1986) 235-286;
(5) K. Stowes, *Introduction to Statistical Mechanics and Thermodynamics*, John Wiley & Sons (1984) at 39-40;
(6) Appendix; and
(7) *Stedman's Medical Dictionary* p. 913 (26th Ed. Williams & Wilkins) (1995).

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Appendix: Calculation of the Number of Possible Arrangements of 3 Members Satisfying a Condition in a Group of 38 Members.

Applicants enclose for the Office's convenience and consideration a copy of K. Stowes, *Introduction to Statistical Mechanics and Thermodynamics*, John Wiley & Sons (1984) at 39-40. At the top of page 40, the reference exemplifies how to determine the number of possible arrangements of 5 molecules that leave 2 in the front and 3 in the back. The prediction uses the binomial coefficient

$$N!/(n!(N-n)!) \qquad (1)$$

where n members of a group containing N members satisfy a criteria, which in this case is being present at all. N=5, n=2, so there are 5!/2!3! = 10 different arrangements.

N!/(N-n)! from Formula (1) states there are N choices for the first molecule and (N-1) choices for the second molecule, *etc.* The 1/n! accounts for the identity of the molecules. For example, the combination of molecules 1 and 2, written in shorthand as (1,2), would be the same as (2,1).

To see how this example may be applied here, assume you had 5 (*i.e.*, N=5) dyes on the shelf and you wanted to know the number of combinations of 2 (*i.e.*, n=2) dyes that could be placed in the reaction mixture (*cf.* front of the room) leaving 3 (*i.e.*, N-n=3) dyes on the shelf (*cf.* the back of the room). Assume the dyes are numbered 1 to 5. To determine the answer, one could use formula (1), which gives 10, or count as follows:

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(1,2) (1,3) (1,4) (1,5)

(2,3) (2,4) (2,5)

(3,4) (3,5)

(4,5)

where (1,2) shows the mixture of dyes 1 and 2, *etc.* Simply counting, one finds 10 different dye combinations, which is the same number determined by formula 1.

Stowe states that the calculations are correct for systems of any size (p. 40, right after the first example). Thus, it is fair to apply formula (1) to the present facts.

More particularly, we want to know how many arrangements of 38 dyes that leave 3 in the composition and 35 out of the composition on the shelf. Thus, N=38, n=3 and 38!/3!(38-3)!=

$$\frac{38 \cdot 37 \cdot 36 \cdot 35 \cdot 34 \ldots 1}{3 \cdot 2\,(35 \cdot 34 \cdot \ldots 1)} = \frac{38 \cdot 37 \cdot 36}{6} =$$

8436 different arrangements.

If you consider the extra dye found in Tables 2 and 3 above, then we could assume N=39 and n=3 to produce **9139** arrangements.

For comparison, if N=37 and n=3, there are **7770** arrangements. Thus, the growth of arrangements is nonlinear with respect to increasing N.

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